Economics 102
Spring 2012
Homework #1
Due 2/8/12

Directions: The homework will be collected in a box **before** the lecture. Please place your name, TA name and section number on top of the homework (legibly). Make sure you write your name as it appears on your ID so that you can receive the correct grade. Please remember the section number for the section **you are registered,** because you will need that number when you submit exams and homework. Late homework will not be accepted so make plans ahead of time. **Please show your work.** Good luck!

1. For the following pairs of equations below, find the point of intersection for each pair.
    a. $7y - 14x = 49$ and $-3x = y - 12$
    b. $13 + y = 3x$ and $3 - x = y$
    c. $5y + 15x = 25$ and $2x - y = 10$

2. Find the equation of a line described by the following:
    a. A line that goes through the points (7, 5) and (11, 3)
    b. A line that has a y-intercept of 8 and goes through the point (1, 2)
    c. A line with a slope of 3 and goes through the point (6, 5)

3. Assume Agrabah and Mypos are two countries. Both countries produce carpets and cups. Suppose that these two countries only use labor to produce these two goods (this is just a simplifying assumption to make our work easier). Agrabah is a larger country and has 400 hours of labor available while smaller Mypos only has 100 hours of labor. The following table tells you how many hours of labor are needed in each country to produce one carpet or one cup.

	Hours of Labor Needed to Produce One Carpet	Hours of Labor Needed to Produce One Cup
Agrabah	2 hours of labor	8 hours of labor
Mypos	4 hours of labor	5 hours of labor

    a. Using the above table, draw the production-possibility frontiers (PPF) for both Agrabah and Mypos(on two separate charts). Put number of carpets produced on the Y axis, and cups produced on the X axis.
    b. What is Agrabah's opportunity cost of producing one carpet?
    c. What is Agrabah's opportunity cost of producing one cup?
    d. What is Mypos's opportunity cost of producing one carpet?
    e. What is Mypos's opportunity cost of producing one cup?
    f. Which country has the absolute advantage in producing carpets?
    g. Which country has the absolute advantage in producing cups?
    h. Which country has the comparative advantage in producing carpets?

i. Which country has the comparative advantage in producing cups?
j. What range of trading prices would be acceptable to both countries in terms of carpets for 1 cup?
k. What range of trading prices would be acceptable to both countries in terms of cups for 4 carpets?
l. Suppose now that the two countries agree to team up and combine their production. Draw the combined PPF for the two countries.

4. Suppose there are two countries, Kreplakistan and Petoria, which produce wallets and radios. The only input required to produce these goods is labor. Both countries have linear PPF's. You are given the following information about the amount of labor that is needed in each country to produce wallets and radios.

	Hours of Labor Needed to Produce One Wallet	Hours of Labor Needed to Produce One Radio
Kreplakistan	2 hours of labor	2 hour of labor
Petoria	1 hours of labor	4 hours of labor

You are also given the following information about the current level of production of wallets and radios. Both countries are currently producing at an efficient level.

	Current Level of Wallet Production	Current Level of Radio Production
Kreplakistan	180	100
Petoria	50	50

a. If Kreplakistan only produces wallets, what is the maximum amount of wallets it can produce?
b. If Kreplakistan only produces radios, what is the maximum amount of radios it can produce?
c. If Petoria only produces wallets, what is the maximum amount of wallets it can produce?
d. If Petoria only produces radios, what is the maximum amount of radios it can produce given the above information?
e. Which country has the comparative advantage in the production of wallets?
f. Which country has the comparative advantage in the production of radios?

5. Suppose there are two people on an island, Chuck and Wilson. Both can gather fish and coconuts and have 100 hours of labor available. The following table shows how long it takes each person to gather fish and coconuts.

	Hours of Labor Needed to Gather One Fish	Hours of Labor Needed to Produce One Coconut
Chuck	1 hours of labor	1 hour of labor
Wilson	4 hours of labor	2 hours of labor

a. Which person has the comparative advantage in the gathering of fish?
b. Which person has the comparative advantage in the gathering of coconuts?
c. Chuck realizes that he is faster at gathering both fish and coconuts and decides he would be better off moving to the other side of the island by himself. Given that the two individuals do not trade, is 21 fish and 81 coconuts attainable for Chuck? Is 29 fish and 19 coconuts attainable for Wilson?
d. A week later Wilson comes to Chuck's side of the island with an idea: Wilson would produce 50 coconuts and tells Chuck to produce 50 fish and 50 coconuts. Then Wilson will give Chuck 31 coconuts in exchange for 29 fish. Is this a reasonable price for trade? If the trade is accepted, how many fish and coconuts will Chuck and Wilson each have?